

DOCUMENT RESUME

ED 212 114

EC 141 523

AUTHOR Katz, Roger C.; Vinciguerra, Paul
TITLE On the Neglected Art of "Thinning" Reinforcers.
PUB DATE Apr 81
NOTE 9p.; Paper presented at the Western Psychological Association (Los Angeles, CA, April 9-12, 1981).
AVAILABLE FROM Roger C. Katz, Ph.D., Department of Psychology, University of the Pacific, Stockton, CA 95211.
EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS *Behavior Modification; Case Studies; *Emotional Disturbances; *Feedback; *Reinforcement; *Self Esteem

ABSTRACT

A single case alternating treatment design was used to investigate interactions between reinforcement scheduling and the information that accompanies a shift from a high to lower density of reinforcement with a 12 year old emotionally disturbed boy. Results showed that the informational variables exerted functional control over behavior, with the best maintenance produced by messages that stressed personal competence. The results also underscore the role of cognitive variables in the thinning process. (Author)

* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *

ED212114

ON THE NEGLECTED ART OF "THINNING" REINFORCERS

Roger C. Katz and Paul Vinciguerra

University of the Pacific

U.S. DEPARTMENT OF EDUCATION
NATIONAL INSTITUTE OF EDUCATION
EDUCATIONAL RESOURCES INFORMATION
CENTER (ERIC)

- ☒ This document has been reproduced as received from the person or organization originating it.
- ☐ Minor changes have been made to improve reproduction quality.
- Points of view or opinions stated in this document do not necessarily represent official NIE position or policy.

Thanks are extended to Alison Pratt and Dr. Esther Cohen for their help in this research. Reprint requests should be addressed to Roger C. Katz, Ph.D, Department of Psychology, University of the Pacific, Stockton, CA 95211.

"PERMISSION TO REPRODUCE THIS
MATERIAL HAS BEEN GRANTED BY

Roger C. Katz

TO THE EDUCATIONAL RESOURCES
INFORMATION CENTER (ERIC)."

EC141523

ON THE NEGLECTED ART OF "THINNING" REINFORCERS

Response maintenance is an important issue in behavior therapy with children. For example, by withdrawing reinforcers too quickly a rapid return to baseline may result. To prevent this setback and to prolong treatment effects, the procedure of thinning to more intermittent schedules is often prescribed (Stokes & Baer, 1977). Studies have shown that response maintenance can be enhanced by thinning (Jones & Kazdin, 1975; Kazdin & Polster, 1973) but little attention has been given to practical problems that sometimes accompany the thinning process--e.g., when to begin, how fast to proceed, what to tell the child when reductions of reinforcement occur.

The present study was concerned with this last issue--the effects of informational variables that accompany the transition from a high to low density schedule of reinforcement. Three conditions were compared in a single case alternating treatment design (Barlow & Hayes, 1979). One stressed personal competence or self-efficacy messages. Another attributed reductions in reinforcement to external factors beyond the subjects control. In the third condition the child was told nothing when the rate of reinforcement was lowered.

Method

The subject was a 12 year old emotionally disturbed boy who displayed severe disruptive behavior in the classroom. Treatment consisted of token reinforcement for on-task behavior during individual tutorial sessions. Each session lasted about 30 minutes and was run by the second author. An interval recording system was used to measure the percent of time on-task.

Interobserver reliability was taken throughout the study yielding an average percentage agreement figure of 89%. As noted earlier, an alternating treatment design was used to investigate treatment effects--in this case, possible interactions between reinforcement scheduling and the information that accompanied the shift from high to lower density reinforcement. The informational context was the main variable of interest.

The study proceeded as follows. During baseline the child was given a spelling assignment and asked to work for about 30 minutes. On-task behavior was recorded for 5 days without reinforcement. During acquisition, a FI 30" schedule was used to encourage on-task behavior. The child received tokens for being on-task which could later be exchanged for various back-ups. The FI 30" continued for 15 sessions, at which time the child had been on-task over 90% of the time for four consecutive sessions. During the alternating treatment phase, the FI 30" schedule was abruptly thinned to a FI 5'. At the same time, the different information conditions were introduced individually but in random order to control for sequence or order effects from one session to the next. This continued until each information condition had been used for 5 treatment sessions. Furthermore, to minimize carryover effects and establish a common baseline during the thinning phase, each session began with 5 minutes of FI 30" reinforcement before shifting to the FI 5' schedule. The information conditions were a) a personal competence set in which the child was told "You're doing such a good job today I don't think you need as many tokens", b) an external attribution set in which reductions in reinforcement were attributed to factors beyond the child's control such as shortened supplies of tokens

or backups, and c) a no information condition in which the child was told nothing when the schedule change occurred.

Results and Discussion

Results indicate that on-task behavior varied as a function of the information that accompanied the shift in reinforcement schedules. With the personal competence set, on-task behavior was maintained at an average of 87% of the intervals. This was higher than the no information condition where the mean level was 78%, and the external attribution condition where the mean was 54%. Only with the personal competence message was the child's rate of on-task behavior under FI 5' reinforcement the same as his performance under the richer FI 30" schedule. The randomized order in which the information conditions were presented makes it unlikely that these differences were due to an order effect or carryover effect. Likewise, under the FI 5' schedule the child's on-task behavior was high enough to insure that all scheduled reinforcers were earned. Thus the amount of reinforcement he earned was constant from one thinning session to the next and not confounded with the information variables.

Insert Figure 1 Here

It has become almost axiomatic to prescribe intermittent reinforcement when durable behavior change is desired. However, results of this study suggest that more than reinforcement variables need to be considered. The information that accompanies schedule changes (and possibly the presentation of reinforcers in general) also exerts functional control over behavior. This finding is consistent with the thinking of Feingold and Mahoney (1975) who wrote, "The act of reinforcement is inherently an

act of communication. The recipient may learn to value an act not because of its tangible consequences but because of other evaluative cues inherent in their dispensation. Thus, the effects of programmed incentives may be dramatically influenced by the methods by which they are administered (p 375)."

Under conditions of this experiment best results were obtained when reward accompanying messages stressed personal competence. Perhaps reductions in external reinforcement were counterbalanced by increases in self-efficacy or other maintenance-enhancing attributions of competence (Bandura, 1977; Dollinger, 1979) which may be functionally equivalent to the higher density schedule. If this is so, the results underscore the importance of cognitive or symbolic variables in the thinning process. How the person interprets reductions in reinforcement deserves further study, especially as this pertains to the maintenance of behavior change.

Finally, the shift from FI 30" to FI 5' reinforcement is admittedly a "big jump". We realize more gradual thinning is usually recommended in most applications of reinforcement procedures. However, the choice of the FI 5' was determined by experimental consideration--in particular, the need to make the schedule change readily discriminable. The FI 5' schedule seemed adequate to accomplish this goal without being too lean to produce a deterioration of behavior resulting from extinction. While the external validity of the study might be questioned for such abrupt thinning, the results still suggest that reinforcement variables alone are not the whole story.

In the thinning process, what fewer rewards mean to the subject as influenced by reward accompanying messages or the manner in which reinforcers are given is also a relevant concern.

REFERENCES

Bandura, A. Self-efficacy: Toward a unifying theory of behavior change. Psychological Review, 1977, 84, 191-215.

Barlow, D. & Hayes, S. Alternating treatment designs: One strategy for comparing the effects of two treatments in a single subject. Journal of Applied Behavior Analysis, 1979

Dollinger, S. Extrinsic reards, reward-associated messages, and intrinsic motivativation. Cognitive Therapy and Research, 1979, 3, 367-370.

Feingold, B. & Mahoney, M. Reinforcement effects on intrinsic interest: Undermining the overjustification hypothesis. Behavior Therapy, 1975, 6, 367-377.

Jones, R. & Kazdin, A. Programming response maintenance after withdrawing token reinforcement. - Behavior Therapy, 1975, 6, 153-164.

Kazdin, A. & Polster, R. Intermittent token reinforcement and response maintenance in extinction. Behavior Therapy, 1973, 4, 386-391.

Stokes, T. & Baer, D. An implicit technology of generalization. Journal of Applied Behavior Analysis, 1977, 10, 349-367.

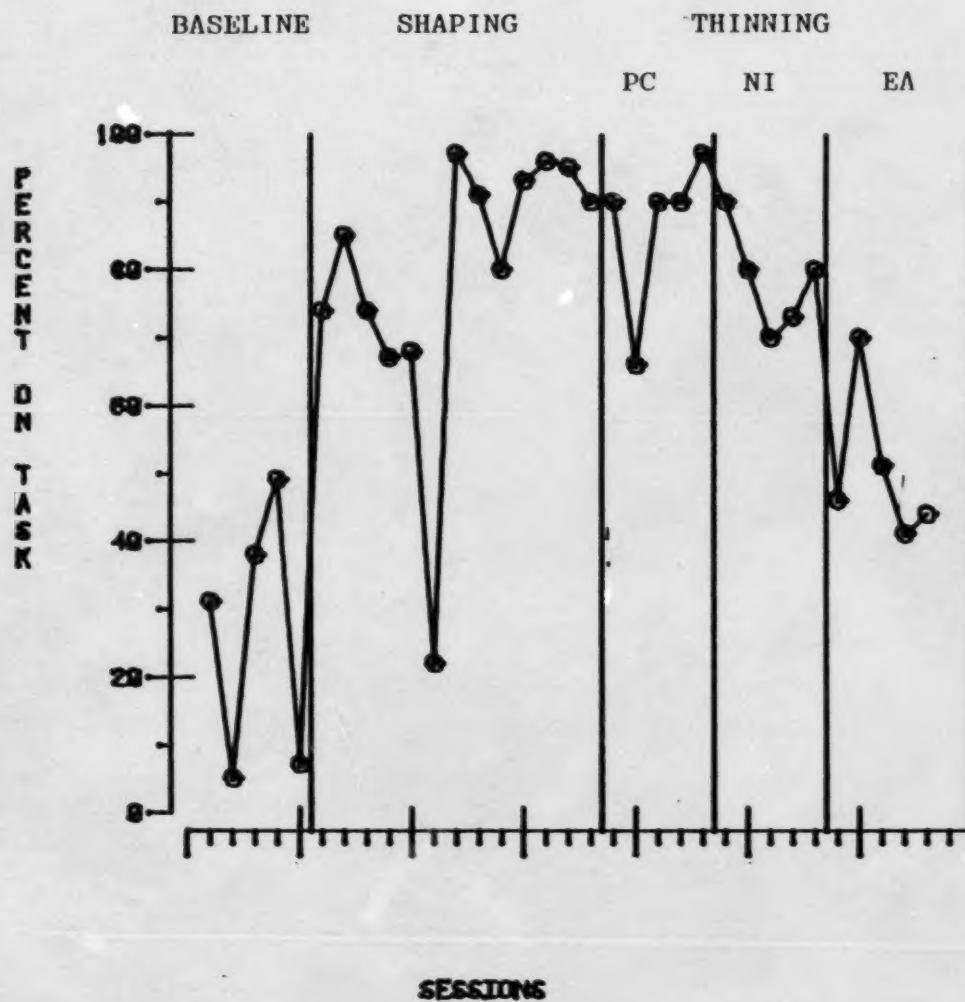


Figure Caption

Figure 1. Percentage of intervals of on-task behavior during baseline, shaping (FI 30"), and thinning (FI 5') sessions. The headings PC, NI, and EA stand for the personal competence, no information, and external attribution conditions, respectively. Although depicted in sequence, the different information conditions were given in random order.